I Claim:

1. A method for making a keratin network comprising a heterogeneous crosslinking agent, said method comprising exposing α-keratins comprising reactive pendant groups to a heterogeneous crosslinking agent other than glutaraldehde comprising a first functional group and a second functional group adapted to react with said reactive pendant groups under conditions effective to induce a first reaction between said first functional groups on a plurality of molecules of said crosslinking agent and first reactive pendant groups on a plurality of first α-keratin molecules and to induce a second reaction between said second functional groups on a plurality of molecules of said crosslinking agent and second reactive pendant groups on a plurality of second α-keratin molecules, thereby producing a heterogenous cross-linked keratin network.

2. The method of claim 1 wherein said first reaction is effective to produce covalent bonds between said first functional group and said first reactive pendant group and said second reaction is effective to produce covalent bonds between said second functionality and said second reactive pendant group.

3. The method of claim 1 wherein said first functional group and said second functional group are independently selected from the group consisting of alkoxide groups, vinyl groups, hydroxyl groups, amine groups, aldehyde groups, isocyanate groups, ester groups, and anhydride groups.

4. The method of claim 2 wherein said first functional group and said second functional group are independently selected from the group consisting of alkoxide groups, vinyl groups, hydroxyl groups, amine groups, aldehyde groups, isocyanate groups, ester groups, and anhydride groups.

5. The method of claim 1 wherein said crosslinking agent is selected from the group consisting of a a multi-functional alkoxide, a multifunctional vinyl, a multi-functional hydroxyl, a multifunctional amine, a multi-functional aldehyde, a multi-functional isocyanate, a multifunctional ester, and an anhydride.

6. The method of claim 2 wherein said crosslinking agent is selected from the group consisting of a a multi-functional alkoxide, a multifunctional vinyl, a multi-functional hydroxyl, a multifunctional amine, a multi-functional aldehyde, a multi-functional isocyanate, a multifunctional ester, and an anhydride.

7. The method of claim 3 wherein said crosslinking agent is selected from the group consisting of a a multi-functional alkoxide, a multifunctional vinyl, a multi-functional hydroxyl, a multifunctional amine, a multi-functional aldehyde, a multi-functional isocyanate, a multifunctional ester, and an anhydride.

8. The method of claim 4 wherein said crosslinking agent is selected from the group consisting of a a multi-functional alkoxide, a multifunctional vinyl, a multi-functional hydroxyl, a multifunctional amine, a multi-functional aldehyde, a multi-functional isocyanate, a multifunctional ester, and an anhydride.

9. A method for making a keratin network comprising a heterogeneous crosslinking agent, said method comprising:

treating soluble α-keratin proteins comprising disulfide bonds under first conditions effective to break said disulfide bonds and to convert cystine residues to thiolate anions;

exposing said thiolate anions to a crosslinking agent other than glutaraldehyde comprising at least a first functional group and a second functional group reactive with thiolate anions under conditions effective to induce a first

reaction between said first functional group on a plurality of molecules of said crosslinking agent and first thiolate anions on a plurality of first α-keratin protein molecules, and to induce a second reaction between said second functional group on a plurality of molecules of said crosslinking agent and second thiolate anions on a plurality of second α-keratin proteins, thereby producing a heterogenous cross-linked keratin network.

10. The method of claim 9 wherein said first reaction and said second reaction produce thiolate ethers.

11. The method of claim 9 wherein said crosslinking agent has the following general structure:

R-X

wherein R is an organic group adapted to covalently bond with sulfur;

X is adapted to be displaced from R by a sulfur anion.

12. The method of claim 11 wherein

R comprises a substitution end which bonds with the sulfur and a reactive end which reacts with the crosslinking agent, said substitution end being selected from the group consisting of unsubstituted and halo-substituted alkyl groups and mono- or multialkylene groups having from about 1 to about 8 carbon atoms, and unsubstituted and halo-substituted aryl groups. said reactive ends being selected from the group consisting of acyl groups, and polyalkylethers containing from about 1 to 50 repeat groups, isocyanate groups, organosilane groups, and silicone groups; and

X is selected from the group consisting of sulfide groups, sulfonate groups, cyanate groups, thiocyanate groups, halide groups, hydrosulfide groups,

hydroxide groups, alkoxide groups, azide groups, tosylate groups, and acetate groups.

13. The method of claim 10 wherein said crosslinking agent has the following general structure:

R-X

wherein R is an organic group adapted to covalently bond with sulfur;

X is adapted to be displaced from R by a sulfur anion.

14. The method of claim 13 wherein

R comprises a substitution end which bonds with the sulfur and a reactive end which reacts with the crosslinking agent, said substitution end being selected from the group consisting of unsubstituted and halo-substituted alkyl groups and mono- or multialkylene groups having from about 1 to about 8 carbon atoms, and unsubstituted and halo-substituted aryl groups. said reactive ends being selected from the group consisting of acyl groups, and polyalkylethers containing from about 1 to 50 repeat groups, isocyanate groups, organosilane groups, and silicone groups; and

X is selected from the group consisting of sulfide groups, sulfonate groups, cyanate groups, thiocyanate groups, halide groups, hydrosulfide groups, hydroxide groups, alkoxide groups, azide groups, tosylate groups, and acetate groups.

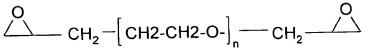
15. The method of claim 11 wherein X is a halide group.

16. The method of claim 12 wherein X is a halide group.

17. The method of claim 13 wherein X is a halide group.

18. The method of claim 14 wherein X is a halide group.

19. The method of claim 9 wherein said crosslinking agent is a diepoxide resin having the following general structure:



wherein n is from about 1 to about 50.

20. A method for functionalizing α-keratin proteins comprising exposing said α-keratin proteins comprising reactive pendant groups to a nucleophilic substitution agent comprising at least one terminal epoxide under conditions effective to induce a plurality of said reactive pendant groups to react with said nucleophilic substitution agent, thereby producing a plurality of epoxidized α-keratin molecules.

21. The method of claim 20 wherein said reactive pendant groups are thiolate anions.

22. The method of claim 20 wherein said nucleophilic substitution agent is epichlorohydrin.

23. The method of claim 21 wherein said nucleophilic substitution agent is epichlorohydrin.

24. The method of claim 20 further comprising treating said plurality of epoxidized α-keratin molecules under conditions effective to induce first epoxidized pendant groups on a plurality of first epoxidized α-keratin molecules to react with nucleophilic pendant groups on a plurality of second α-keratin molecules, producing said cross-linked α-keratin network.

25. The method of claim 21 further comprising treating said plurality of epoxidized α-keratin molecules under conditions effective to induce first epoxidized pendant groups on a plurality of first epoxidized α-keratin molecules to react with nucleophilic pendant groups on a plurality of second α-keratin molecules, producing said cross-linked α-keratin network.

26. The method of claim 22 further comprising treating said plurality of epoxidized α-keratin molecules under conditions effective to induce first epoxidized pendant groups on a plurality of first epoxidized α-keratin molecules to react with nucleophilic pendant groups on a plurality of second α-keratin molecules, producing said cross-linked α-keratin network.

27. The method of claim 23 further comprising treating said plurality of epoxidized α-keratin molecules under conditions effective to induce first epoxidized pendant groups on a plurality of first epoxidized α-keratin molecules to react with nucleophilic pendant groups on a plurality of second α-keratin molecules, producing said cross-linked α-keratin network.

28. The method of claim 24 wherein said nucleophilic pendant group is a reactive amine group.

29. The method of claim 25 wherein said nucleophilic pendant group is a reactive amine group.

30. The method of claim 26 wherein said nucleophilic pendant group is a reactive amine group.

31. The method of claim 27 wherein said nucleophilic pendant group is a reactive amine group.

32. A method for making a keratin network comprising a heterogeneous crosslinking agent, said method comprising exposing α-keratins comprising reactive pendant groups to a crosslinking agent comprising at least a first terminal epoxide and a second terminal epoxide under conditions effective to induce a first reaction between said first terminal epoxide on a plurality of molecules of said crosslinking agent and first reactive pendant groups on a plurality of first α-keratin proteins molecules, and to induce a second reaction between said second terminal epoxides on a plurality of molecules of said crosslinking agent and second reactive pendant groups on a plurality of second α-keratin proteins molecules, thereby producing a heterogenous cross-linked keratin network.

33. The method of claim 32 wherein said reactive pendant groups comprise an element selected from the group consisting of nitrogen, sulfur, oxygen, and a combination thereof.

34. The method of claim 32 wherein said reactive pendant group comprises an amino acid selected from the group consisting of cysteine, arginine, serine, lysine, asparagine, glutamine, tyrosine, tryptophan, and histidine.

35. The method of claim 32 wherein said reactive pendant group comprises an amino acid selected from the group consisting of cysteine, arginine, and serine.

36. The method of claim 32 wherein said nucleophilic substitution agent is a diepoxide resin selected from the group consisting of a diglycidyl ether of bisphenol A and a diglycidyl ether of polyethylene glycol.

37. The method of claim 33 wherein said nucleophilic substitution agent is a diepoxide resin selected from the group consisting of a diglycidyl ether of bisphenol A and a diglycidyl ether of polyethylene glycol.

38. The method of claim 34 wherein said nucleophilic substitution agent is a diepoxide resin selected from the group consisting of a diglycidyl ether of bisphenol A and a diglycidyl ether of polyethylene glycol.

39. The method of claim 35 wherein said nucleophilic substitution agent is a diepoxide resin selected from the group consisting of a diglycidyl ether of bisphenol A and a diglycidyl ether of polyethylene glycol.

40. A method for making a keratin network comprising a heterogeneous crosslinking agent, said method comprising exposing soluble α-keratin proteins comprising reactive pendant groups to a crosslinking agent comprising a plurality of carboxylic acid groups under conditions effective to induce first reactions between first carboxylic acid groups on a plurality of molecules of said crosslinking agent and first reactive pendant groups on a plurality of first α-keratin protein molecules, and to induce second reactions between second carboxylic acid groups on a plurality of molecules of said crosslinking agent and second reactive pendant groups on a plurality of second α-keratin protein molecules, thereby producing a heterogenous cross-linked keratin network.

41. The method of claim 40 wherein said reactive pendant groups are thiol groups and said first and second reactions produce thiolate esters.

42. The method of claim 40 wherein said crosslinking agent has the following general structure:

$$R(COOH)_n$$

wherein

R is selected from the group consisting of alkylene groups having from about 1 to about 12 carbon atoms, alkenylene groups having from about 2 to about 12 carbon atoms, aryl groups, silyl groups, and silicone groups;

n is from about 2 to about 6.

43. The method of claim 41 wherein said crosslinking agent has the following general structure:

$$R(COOH)_n$$

wherein

R is selected from the group consisting of alkylene groups having from about 1 to about 12 carbon atoms, alkenylene groups having from about 2 to about 12 carbon atoms, aryl groups, silyl groups, and silicone groups;

n is from about 2 to about 6.

44. A method for making a keratin network comprising a heterogeneous crosslinking agent, said method comprising exposing soluble α-keratin proteins comprising reactive pendant groups to phthallic anhydride under conditions effective to induce a first reaction between first reactive pendant groups on a plurality of first α-keratin protein molecules and first carbox-oyl groups of a plurality of molecules of said phthallic anhydride, and to induce a second reaction between second reactive pendant groups on a plurality of second α-keratin protein molecules and second carbox-oyl groups of a plurality of molecules of said phthallic anhydride, thereby producing a heterogenous cross-linked keratin network.

45. The method of claim 44 wherein said pendant groups are thiol groups.

46. A method for making a keratin network comprising a heterogeneous crosslinking agent, said method comprising exposing soluble α-keratin proteins

comprising reactive pendant groups to a crosslinking agent comprising a plurality of cyanate groups under conditions effective to induce a first reaction between first cyanate groups on a plurality molecules of said crosslinking agent and first reactive pendant groups on a plurality of first α-keratin proteins molecules, and to induce a second reaction between second cyanate groups on a plurality of molecules of said crosslinking agent and second reactive pendant groups on a plurality of second α-keratin protein molecules, thereby producing a heterogenous cross-linked keratin network.

47. The method of claim 46 wherein said reactive pendant groups are hydroxyl groups.

48. The method of claim 46 wherein said crosslinking agent has the following general structure:

$$R(OCN)_n$$

wherein R is selected from the group consisting of alkylene groups having from about 1 to about 12 carbon atoms, alkenylene groups having from about 2 to about 12 carbon atoms, aryl groups, silyl groups, and silicone groups.

49. The method of claim 47 wherein said crosslinking agent has the following general structure:

$$R(OCN)_n$$

wherein R is selected from the group consisting of alkylene groups having from about 1 to about 12 carbon atoms, alkenylene groups having from about 2 to about 12 carbon atoms, aryl groups, silyl groups, and silicone groups.

50. A method for making a keratin network comprising a heterogeneous crosslinking agent, said method comprising exposing soluble α-keratin proteins comprising pendant thiol groups to phthallic anhydride under conditions effective to

induce a first reaction between a first thiol group on a plurality of first α-keratin proteins molecules and first carbox-oyl groups of a plurality of said phthallic anhydride molecules, and to induce a second reaction between second thiol groups on a plurality of second α-keratin protein molecules and second carbox-oyl groups of a plurality of said phthallic anhydride molecules, thereby producing a heterogenous cross-linked keratin network.

51. A method for making a keratin network comprising a heterogeneous crosslinking agent other than glutaraldehyde, said method comprising exposing α-keratin proteins comprising carboxylic acid pendant groups to a crosslinking agent comprising at least a first nucleophilic group and a second nucleophilic group under conditions effective to induce a first reaction between said first nucleophilic group on a plurality of molecules of said crosslinking agent and first carboxyl group on a plurality of first α-keratin protein molecules, and to induce a second reaction between said second nucleophilic group on a plurality of molecules of said crosslinking agent and second carboxylic acids on a plurality of second α-keratin protein molecules, thereby producing a heterogenous cross-linked keratin network.

52. The method of claim 51 wherein said nucleophilic group is selected from the group consisting of esters, amines, alcohols, and halogenated reagents.

53. A method for making a protein network comprising a heterogeneous crosslinking agent other than glutaraldehyde, said method comprising exposing soluble proteins comprising reactive pendant groups to a heterogeneous crosslinking agent comprising a first functional group and a second functional group adapted to react with said reactive pendant groups under conditions effective to induce a first reaction between said first functional groups on a plurality of molecules of said crosslinking agent and first

reactive pendant groups on a plurality of first soluble protein molecules, and to induce a second reaction between said second functional groups on a plurality of molecules of said crosslinking agent and second reactive pendant groups on a plurality of second soluble protein molecules, thereby producing a heterogenous cross-linked protein network.

54. The method of claim 53 wherein said first reaction is effective to produce covalent bonds between said first functional group and said first reactive pendant group and said second reaction is effective to produce covalent bonds between said second functionality and said second reactive pendant group.

55. The network of claim 53 wherein said proteins are selected from the group consisting of keratins, collagens, and elastins.

56. The network of claim 54 wherein said proteins are selected from the group consisting of keratins, collagens, and elastins.

57. The method of claim 53 wherein said first functional group(s) and said second functional group(s) independently are selected from the group consisting of alkoxide groups, vinyl groups, hydroxyl groups, amine groups, aldehyde groups, isocyanate groups, ester groups, and anhydride groups.

58. The method of claim 54 wherein said first functional group(s) and said second functional group(s) independently are selected from the group consisting of alkoxide groups, vinyl groups, hydroxyl groups, amine groups, aldehyde groups, isocyanate groups, ester groups, and anhydride groups.

59. The method of claim 56 wherein said first functional group(s) and said second functional group(s) independently are selected from the group consisting of

alkoxide groups, vinyl groups, hydroxyl groups, amine groups, aldehyde groups, isocyanate groups, ester groups, and anhydride groups.

60. The method of claim 53 wherein said crosslinking agent is selected from the group consisting of a multifunctional alkoxide, a multifunctional vinyl, a multifunctional hydroxyl, a multifunctional amine, a multifuncitonal aldehyde, a multifunctional isocyanate, an anhydride, and a multifuncitonal carboxylic acid.

61. The method of claim 54 wherein said crosslinking agent is selected from the group consisting of a multifunctional alkoxide, a multifunctional vinyl, a multifunctional hydroxyl, a multifunctional amine, a multifuncitonal aldehyde, a multifunctional isocyanate, an anhydride, and a multifuncitonal carboxylic acid.

62. The method of claim 56 wherein said crosslinking agent is selected from the group consisting of a multifunctional alkoxide, a multifunctional vinyl, a multifunctional hydroxyl, a multifunctional amine, a multifuncitonal aldehyde, a multifunctional isocyanate, an anhydride, and a multifuncitonal carboxylic acid.

63. The network of claim 53 wherein said first bonds and said second bonds are covalent bonds.

64. The network of claim 54 wherein said first bonds and said second bonds are covalent bonds.

65. The network of claim 56 wherein said first bonds and said second bonds are covalent bonds.

66. The network of claim 59 wherein said first bonds and said second bonds are covalent bonds.

67. The network of claim 62 wherein said first bonds and said second bonds are covalent bonds.

68. The network of claim 53 wherein said reactive pendant groups are selected from the group consisting of hydroxyl groups, thiol groups, reactive amine groups, and epoxides.

69. The network of claim 54 wherein said reactive pendant groups are selected from the group consisting of hydroxyl groups, thiol groups, reactive amine groups, and epoxides.

70. The network of claim 56 wherein said reactive pendant groups are selected from the group consisting of hydroxyl groups, thiol groups, reactive amine groups, and epoxides.

71. The network of claim 59 wherein said reactive pendant groups are selected from the group consisting of hydroxyl groups, thiol groups, reactive amine groups, and epoxides.

72. The network of claim 62 wherein said reactive pendant groups are selected from the group consisting of hydroxyl groups, thiol groups, reactive amine groups, and epoxides.

73. The network of claim 67 wherein said reactive pendant groups are selected from the group consisting of hydroxyl groups, thiol groups, reactive amine groups, and epoxides.

74. The network of claim 60 wherein said reactive pendant groups are selected from the group consisting of hydroxyl groups, thiol groups, reactive amine groups, and epoxides.

75. A heterogenous crosslinked protein network comprising a plurality of protein molecules interlinked by a crosslinking agent other than glutaraldehyde, said network comprising first bonds between first functional groups on a plurality of

molecules of said crosslinking agent and first pendant groups on a plurality of first protein molecules and second bonds between second functional groups on a plurality of molecules of said crosslinking agent and second reactive pendant groups on a plurality of second protein molecules.

76. The network of claim 75 wherein said proteins are selected from the group consisting of keratins, collagens, and elastins.

77. A heterogenous crosslinked keratin network comprising a plurality of α-keratin molecules interlinked by a crosslinking agent other than glutaraldehyde, said network comprising first bonds between first functional groups on a plurality of molecules of said crosslinking agent and first pendant groups on a plurality of first protein molecules and second bonds between second functional groups on a plurality of molecules of said crosslinking agent and second reactive pendant groups on a plurality of second protein molecules.

78. The method of claim 77 wherein said first functional group(s) and said second functional group(s) independently are selected from the group consisting of alkoxide groups, vinyl groups, hydroxyl groups, amine groups, aldehyde groups, isocyanate groups, ester groups, and anhydride groups.

79. The method of claim 77 wherein said crosslinking agent is selected from the group consisting of a multifunctional alkoxide, a multifunctional vinyl, a multifunctional hydroxyl, a multifunctional amine, a multifuncitonal aldehyde, a multifunctional isocyanate, an anhydride, and a multifuncitonal carboxylic acid.

80. The method of claim 78 wherein said crosslinking agent is selected from the group consisting of a multifunctional alkoxide, a multifunctional vinyl, a

multifunctional hydroxyl, a multifunctional amine, a multifuncitonal aldehyde, a multifunctional isocyanate, an anhydride, and a multifuncitonal carboxylic acid.

81. The network of claim 77 wherein said first bonds and said second bonds are covalent bonds.

82. The network of claim 78 wherein said first bonds and said second bonds are covalent bonds.

83. The network of claim 79 wherein said first bonds and said second bonds are covalent bonds.

84. The network of claim 77 wherein said reactive pendant groups are selected from the group consisting of hydroxyl groups, thiol groups, reactive amine groups, and epoxides.

85. The network of claim 78 wherein said reactive pendant groups are selected from the group consisting of hydroxyl groups, thiol groups, reactive amine groups, and epoxides.

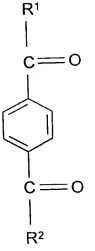
86. The network of claim 79 wherein said reactive pendant groups are selected from the group consisting of hydroxyl groups, thiol groups, reactive amine groups, and epoxides.

87. The network of claim 81 wherein said reactive pendant groups are selected from the group consisting of hydroxyl groups, thiol groups, reactive amine groups, and epoxides.

88. The network of claim 82 wherein said reactive pendant groups are selected from the group consisting of hydroxyl groups, thiol groups, reactive amine groups, and epoxides.

89. The network of claim 83 wherein said reactive pendant groups are selected from the group consisting of hydroxyl groups, thiol groups, reactive amine groups, and epoxides.

90. A heterogeneous crosslinked proteinaceous network comprising the following crosslinks:



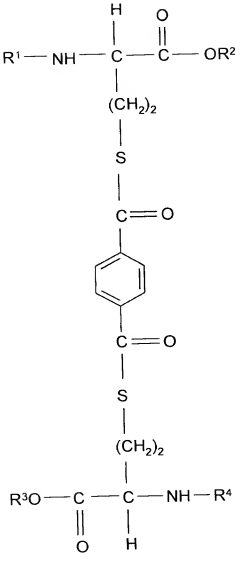
wherein R^1 and R^2 independently are amino acid residues from separate protein molecules, the residues being selected from the group consisting of cysteine, arginine, serine, lysine, asparagine, glutamine, tyrosine, tryptophan, and histidine.

91. The network of claim 90 wherein said protein molecules are keratin molecules.

92. The method of claim 90 wherein R^1 and R^2 independently are selected from the group consisting of cysteine and arginine.

93. The method of claim 91 wherein R^1 and R^2 independently are selected from the group consisting of cysteine and arginine.

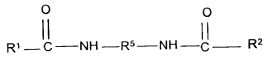
94. A heterogeneous cross-linked proteinaceous network comprising the following crosslinks:



wherein R^1 and R^2 independently are amino acid residues from separate protein molecules, the residues being selected from the group consisting of cysteine, arginine, serine, lysine, asparagine, glutamine, tyrosine, tryptophan, and histidine.

95. The network of claim 94 wherein said protein molecules are keratin molecules.

96. A heterogeneous crosslinked proteinaceous network comprising the following crosslinks:



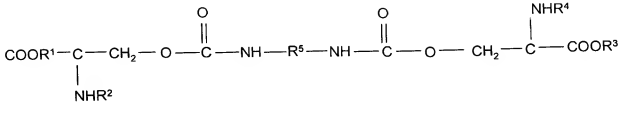
wherein

R^1 and R^2 independently are amino acid residues from separate protein molecules, the residues being selected from the group consisting of glutamic acid and aspartic acid; and,

R^5 is selected from the group consisting of alkoxy groups, alkylene groups, and alkenyl groups having from about 1 to about 50 carbon atoms, alone, or in combination with cyclic alkyl groups or aromatic groups.

97. The network of claim 96 wherein said protein molecules are keratin molecules.

98. A heterogeneous crosslinked proteinaceous network comprising the following crosslinks:

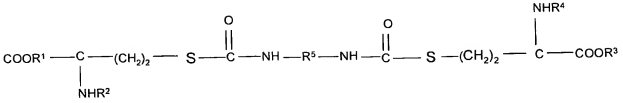


wherein R^1 and R^2 are the remainder of a first protein molecule; and,

R^3 and R^4 are the remainder of a second protein molecule.

99. The network of claim 98 wherein said first and second protein molecules are keratin molecules.

100. A heterogeneous crosslinked proteinaceous network comprising the following crosslinks:

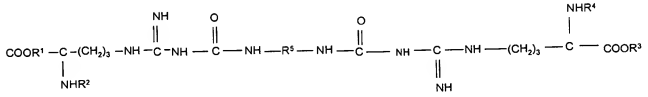


wherein R^1 and R^2 are the remainder of a first protein molecule; and,

R^3 and R^4 are the remainder of a second protein molecule.

101. The network of claim 100 wherein said first and second protein molecules are keratin molecules.

102. A heterogeneous crosslinked proteinaceous network comprising the following crosslinks:

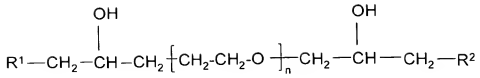


wherein R^1 and R^2 are the remainder of a first protein molecule; and,

R^3 and R^4 are the remainder of a second protein molecule.

103. The network of claim 102 wherein said first and second protein molecules are keratin molecules.

104. A heterogeneous crosslinked network comprises the following crosslinks:



wherein

n is from about 1 to about 50; and,

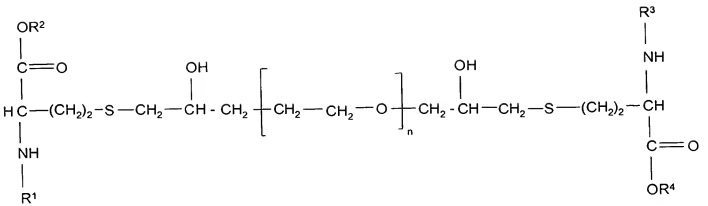
R^1 and R^2 independently are amino acid residues from separate protein molecules, the residues being selected from the group consisting of cysteine, arginine, serine, lysine, asparagine, glutamine, tyrosine, tryptophan, and histidine.

105. The network of claim 104 wherein R^1 and R^2 independently are selected from the group consisting of cysteine and arginine.

106. The network of claim 104 wherein said protein molecules are keratin molecules.

107. The network of claim 105 wherein said protein molecules are keratin molecules.

108. A heterogeneous crosslinked proteinaceous network comprising crosslinks having the following structure:



wherein

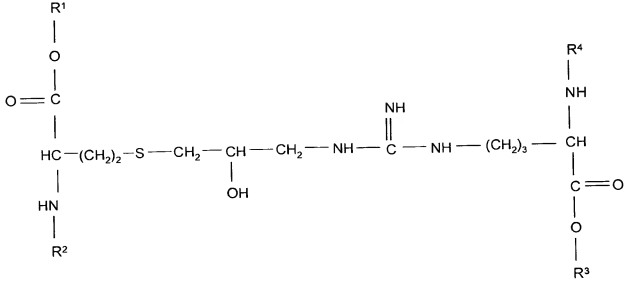
n is from 1 to 50;

R^1 and R^2 are the remainder of a first protein molecule; and,

R^3 and R^4 are the remainder of a second protein molecule.

109. The network of claim 108 wherein said first and second protein molecules are keratin molecules.

110. A heterogeneous crosslinked proteinaceous network comprising the following crosslinks:



wherein

R^1 and R^2 are the remainder of a first protein molecule; and

R^3 and R^4 are the remainder of a second protein molecule.

111. A method for increasing or decreasing the dissolution rate of a heterogeneous crosslinked proteinaceous network comprising controlling a quantity of crosslink bonds having a characteristic selected from the group consisting hydrophobicity, hydrolytic stability, and steric hindrance.

112. The method of claim 111 wherein said α-keratins are derived from human hair.

113. The method of claim 111 wherein said cross-linked keratin network resists hydrolysis upon exposure to an aqueous buffer having a pH of about 7 for at least 7 days.

114. The method of claim 112 wherein said cross-linked keratin network resists hydrolysis upon exposure to an aqueous buffer having a pH of about 7 for at least 7 days.